

**REMARKS**

Claims 3-7, 10, 13, 14 and 16-18, 20 and 23-27 are now in the application. Claims 3-5, 10, 13-14 and 20 and 23-25 are directed to the elected invention. Claims 6, 7 and 16-18 are drawn to non-elected invention and may be canceled by the Examiner upon the allowance of the claims directed to the elected invention.

With respect to the Information Disclosure Statement filed March 14, 2008, copies of the reference were filed along with English language Abstracts thereof as can be seen on PAIR. The English language Abstracts can be seen on the first page of Citation BA, the last page of Citation BB and the last page of Citation BC. Accordingly, it is respectfully requested that the Examiner consider and acknowledge the Information Disclosure Statement filed on March 14, 2008. For the Examiner's convenience, attached are the form PTO/SB/08 A/B and one copy each of the Citations and English language Abstracts filed March 14, 2008.

Claims 23-27 were rejected under 35 U.S.C. 102(a) as being anticipated by JP 2002-275642 (JP'642). Claims 3-5, 10, 13-14 and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP'642. JP 2002-275642 does not anticipate and does not render obvious the present claims. As a preliminary matter, it is noted that the body of the Office Action also refers to claims 1 and 2 which have been cancelled and therefore are not subject to these rejections.

JP 2002-275642 does not anticipate and does not render obvious the present claims since, among other things, JP'642 does not disclose a homopolymer of allylamine. In particular, it is asserted in the Office Action that polyallylamine is substantially disclosed in the cited reference. The examiner relies upon the following description: "homopolymer or copolymer of monomers having...amino...groups..." and the description of allylamine as the monomer. However, this description must be read in conjunction with the entire paragraph [0065] from which it was taken as well as the entire disclosure. As clearly stated in paragraph [0065], the polymers referred to acrylic resins which can be either homopolymers or copolymers. Specifically, the description "homopolymer" of the cited reference, paragraph [0065] relates to monomers having an acrylic acid skeleton such as N,N-dimethylaminoethyl(meth)acrylate.

These homopolymers do not include and do not contemplate a homopolymer of allylamine. Thus, the homopolymer of monomers does not include a homopolymer of allylamine. Thus, allylamine is not used as monomer of a homopolymer, but as a possible monomer of a copolymer.

Furthermore a major difference between the suggestions of the cited reference and the present invention is the form in which titanium is included as the film forming component. The cited reference refers to a compound that is attained by the reaction of hydrolysable titanium compounds and hydrogen peroxide; whereas, the present invention contains titanium (actually a fluoro-complex of titanium ion).

Generally speaking, titanium as a single element, and titanium as a component of the large molecules as described in the cited reference are not equivalent. As the claimed invention uses the phrase "comprising titanium", the scope of the claimed invention does not include the hydrolysable titanium compounds described in JP'642.

Particularly, the titanium compounds described in JP'642 are formed using a unique method which presumably was not previously known, and such titanium compounds do not and cannot correspond to titanium according to the present invention.

Accordingly the present invention differs fundamentally from JP'642 and the compositions of the cited reference as a substrate treatment agent would have little or no efficiency as a chemical conversion treatment agent.

In addition, the amine compound according to the present invention co-precipitates with ZrO<sub>2</sub> and adsorbs on the surface of the base metal (especially iron-based metal material). Such an effect is not disclosed in JP'642. Specifically, in application type surface treatment agents such as those of the cited reference, an acrylic resin containing an amino-group is merely used for rust-preventive properties and curing properties. JP'642 contains no description or implication that a polyallylamine and ZrO<sub>2</sub> co-precipitate on the surface of a metal material.

In the present invention, a chemical conversion coating film containing zirconium compounds is formed on the surface of a metal material, by chemical reaction between a chemical conversion agent and the metal material.

At this time, polyallylamine is incorporated into the chemical conversion coating film via interaction with the zirconium compounds contained in the chemical conversion coating film.

As a single molecule of polyallylamine contains a number of amino groups, some of the amino groups interact with the metal material, and other amino groups interact with E-coat which is an upper coating film. Consequently, the adhesiveness of the metal material to the E-coat is improved and superior corrosion resistance is obtained (see, Fig. 1).

On the other hand, a coating film is formed by heating and drying after a treatment solution is applied to the surface of a metal material in the invention described in JP '642. Namely, the treatment solution is used as if it is paint in the invention described in JP '642, and the chemical conversion coating film is not formed on the surface of the metal material. Accordingly, there is no need for (C) an aqueous organic high molecular compound used in the invention of JP '642 to have characteristics enabling incorporation into the coating film. Although JP '642 describes a copolymer using allylamine as a monomer, the present invention which uses polyallylamine in the chemical conversion agent being able to form a chemical conversion coating film is not obvious.

Moreover, the present invention provides for effective adhesiveness of the coating on such difficult to coat surfaces as iron-based metal material. Heretofore, it has been difficult to conduct surface treatment on iron-based metal material with high adhesiveness of the coating film. However, the present invention can accomplish surface treatment with high adhesiveness of the coating film even on iron-based metal material. On the other hand, the cited reference is not related to surface treatment of an iron-based metal material. In addition to the differences of the treatment suggested in JP'642 and the present invention, the cited reference describes the surface treatment of a galvanized-steel sheet.

JP 2002-275642 fails to anticipate the present invention since anticipation requires the disclosure, in a prior art reference, of each and every recitation as set forth in the claims. *See Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985), *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 USPQ2d 1081 (Fed. Cir. 1986), and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 USPQ2d 1241 (Fed. Cir. 1986).

Each and every claim recitation must be considered. *See Pac-Tec, Inc. v. Amerace Corp.* 14 USPQ2d 1871 (Fed. Cir. 1990), cert. denied 502 US 808 (1991).

Therefore the present invention is not anticipated by JP 2002-275642 and is not obvious there over.

In view of the above, reconsideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees due with this response to Deposit Account No. 22-0185 under Order No. 27617-00002 US from which the undersigned is authorized to draw.

Respectfully submitted,

Dated: July 29, 2008

Electronic signature: /Burton A. Amernick/  
Burton A. Amernick  
Registration No.: 24,852  
CONNOLLY BOVE LODGE & HUTZ LLP  
1875 Eye Street, NW  
Suite 1100  
Washington, DC 20006  
(202) 331-7111  
(202) 293-6229 (Fax)  
Attorney for Assignee